REMARKS

Applicants respectfully request reconsideration of the above-captioned application. The recitations of claim 2 have been added to claim 1 and claim 2 subsequently canceled. Therefore, claims 1, 3, 4 and 5 are currently pending.

The Office Action includes a rejection of claims 1, 2, 4 and 5 under 35 U.S.C. §102(b) as allegedly being anticipated by the Morris et al patent (U.S. Patent 5,349,471) and a rejection of claim 3 under 35 U.S.C. §103 as allegedly being unpatentable over the Morris et al patent. These rejections are respectfully traversed.

In the rejection, the Office asserts that "[a]lthough the prior art does not specifically disclose the claimed equation, this feature is seen to be an inherent teaching of that device since sag is a component of path length and would have to be accounted for in constructive interference at a focal point." The Office also asserts that Morris teaches that the refractive surface has a lower order aspheric profile z satisfying the equation recited in column 6, line 60 through column 7, line 5.

With respect to the first assertion, it should be apparent that the Morris et al patent actually does not disclose the sag equation appearing in original claim 1. In fact, equation 1 of the Morris et al. patent at column 4, line 25, is not equivalent to the equation appearing in present claim 1, and one gets different results for sag. If one sets the sag value to zero, one will find the same radii of the zones. However, to determine the sag of each zone, the Morris et al. patent uses a polynomial equation (Equation 3 of the Morris et al. patent), which is widely used. In contrast, the present invention uses a closed form type sag equation to make a new diffractive surface

structure. Hence, the Morris et al. patent does not meet the recitations of claim 1, nor is there any suggestion for a modification to this commonly used equation to meet the recitations of claim 1.

With respect to the latter assertion, it is noted that the equation appearing in present claim 2 includes a factor "k", which relates to a conic coefficient representing the shape of a refractive index. This aspect of the equation of claim 2 is wholly lacking from equation 11 as appears in column 6 of the Morris et al patent.

Further, it would not have been obvious to one of ordinary skill in the art to modify equation 11 appearing at column 6 to include a conic coefficient representing the shape of a refractive surface insofar as there is no suggestion for such change.

With respect to claim 4, it is noted that the Morris et al patent discloses a numerical aperture of a maximum of 55 in Table 3. The open-ended range recited in column 8, lines 55-56 does not support an assertion that the Morris et al patent discloses a refractive surface that has a numerical aperture above 0.85. In fact, it is relatively clear that the Morris et al patent did not anticipate a numerical aperture above 55, given the various wavelengths of light. Similarly, it would seem unlikely that the diffraction pitch of 3μm as recited in claim 3 could be met. Finally, it is not apparent to the undersigned that the equation of claim 5 could be derived from the disclosure starting at column 4, line 11 through column 5, line 65.

Conclusion

In light of the foregoing, applicants respectfully request reconsideration and allowance of the above-captioned application. Should any residual issues exist, the Examiner is invited to contact the undersigned at the number listed below.

Respectfully submitted,

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